

# TEST REPORT

FCC MPE Test for LGSBWAC95  
Certification

**APPLICANT**  
LG Electronics Inc.

**REPORT NO.**  
HCT-RF-2407-FC004

**DATE OF ISSUE**  
July 5, 2024

**Tested by**  
Kyung Jun Woo



**Technical Manager**  
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

**HCT CO., LTD.**  
*BongJai Huh*  
BongJai Huh / CEO



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# TEST REPORT

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DATE OF ISSUE

July 05, 2024

Applicant

**LG Electronics Inc.**

222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea

Product Name

RF Module

Model Name

LGSBWAC95

FCC ID

BEJLGSBWAC95

Date of Test

April 25, 2024 ~ July 05, 2024

Frequency range

2 402 MHz ~ 2 480 MHz (Bluetooth)

2 412 MHz ~ 2 462 MHz (WLAN)

5 180 MHz ~ 5 825 MHz (UNII)

Test Results

PASS

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

Test Standard Used

§ 1.1310, § 2.1091

## REVISION HISTORY

The revision history for this test report is shown in table.

| Revision No. | Date of Issue | Description     |
|--------------|---------------|-----------------|
| 0            | July 05, 2024 | Initial Release |

## Notice

### Content

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

The laboratory is not accredited for the test results marked \*.

Information provided by the applicant is marked \*\*.

Test results provided by external providers are marked \*\*\*.

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

When confirmation of authenticity of this test report is required, please contact [www.hct.co.kr](http://www.hct.co.kr)

This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.  
(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

This test report provides test result(s) under the lab's valid Scope of Accreditation by A2LA (American Association for Laboratory Accreditation), signatory of the ILAC-MRA.  
(A2LA (ISO/IEC 17025) Certificate No. 4114.01)

## RF Exposure Statement

### 1. Limit

According to § 1.1310, § 2.1091 RF exposure is calculated.

#### (i) Limits for Occupational/Controlled Exposure

| Frequency range<br>(MHz) | Electric field<br>Strength (V/m) | Magnetic field<br>Strength (A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------------|-----------------------------|
| 0.3 - 3.00.....          | 614                              | 1.63                             | <sup>(a)</sup> (100)                   | 6                           |
| 3.00 - 30.....           | 8242/f                           | 4.89/f                           | <sup>(a)</sup> (900/ f <sup>2</sup> )  | 6                           |
| 30 - 300.....            | 61.4                             | 0.163                            | 1.0                                    | 6                           |
| 300 - 1500.....          | .....                            | .....                            | f/300                                  | 6                           |
| 1500 - 100.000.....      | .....                            | .....                            | 5                                      | 6                           |

#### (ii) Limits for General Population/Uncontrolled Exposure

| Frequency range<br>(MHz) | Electric field<br>Strength (V/m) | Magnetic field<br>Strength (A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------------|-----------------------------|
| 0.3 - 1.34.....          | 614                              | 1.63                             | <sup>(a)</sup> (100)                   | 30                          |
| 1.34 - 30.....           | 824/f                            | 2.19/f                           | <sup>(a)</sup> (180/ f <sup>2</sup> )  | 30                          |
| 30 - 300.....            | 27.5                             | 0.073                            | 0.2                                    | 30                          |
| 300 - 1500.....          | .....                            | .....                            | f/1500                                 | 30                          |
| 1500 - 100.000.....      | .....                            | .....                            | 1.0                                    | 30                          |

F = frequency in MHz

<sup>(a)</sup> = Plane-wave equivalent power density

## 2. Maximum Permissible Exposure Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = Power input to antenna

G = Power gain to the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

### 3. RESULTS

#### 3-1. Bluetooth

|                                                             |             |                    |
|-------------------------------------------------------------|-------------|--------------------|
| Average output Power at antenna input terminal              | 10.00       | dBm                |
| Average output Power at antenna input terminal              | 10.00       | mW                 |
| Prediction distance                                         | 20.00       | cm                 |
| Prediction frequency                                        | 2402 – 2480 | MHz                |
| Antenna Gain(typical)                                       | 1.190       | dBi                |
| Antenna Gain(numeric)                                       | 1.315       | -                  |
| Power density at prediction frequency( S)                   | 0.0026      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000       | mW/cm <sup>2</sup> |

#### 3-2. BT LE

|                                                             |             |                    |
|-------------------------------------------------------------|-------------|--------------------|
| Average output Power at antenna input terminal              | 9.00        | dBm                |
| Average output Power at antenna input terminal              | 7.94        | mW                 |
| Prediction distance                                         | 20.00       | cm                 |
| Prediction frequency                                        | 2402 – 2480 | MHz                |
| Antenna Gain(typical)                                       | 1.190       | dBi                |
| Antenna Gain(numeric)                                       | 1.315       | -                  |
| Power density at prediction frequency( S)                   | 0.0021      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000       | mW/cm <sup>2</sup> |

#### 3-3. DTS

|                                                             |             |                    |
|-------------------------------------------------------------|-------------|--------------------|
| Average output Power at antenna input terminal              | 19.00       | dBm                |
| Average output Power at antenna input terminal              | 79.43       | mW                 |
| Prediction distance                                         | 20.00       | cm                 |
| Prediction frequency                                        | 2412 – 2472 | MHz                |
| Antenna Gain(typical)                                       | 3.380       | dBi                |
| Antenna Gain(numeric)                                       | 2.178       | -                  |
| Power density at prediction frequency( S)                   | 0.0344      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000       | mW/cm <sup>2</sup> |

### 3-4. UNII

|                                                             |             |                    |
|-------------------------------------------------------------|-------------|--------------------|
| Average output Power at antenna input terminal              | 17.00       | dBm                |
| Average output Power at antenna input terminal              | 50.12       | mW                 |
| Prediction distance                                         | 20.00       | cm                 |
| Prediction frequency                                        | 5180 – 5825 | MHz                |
| Antenna Gain(typical)                                       | 4.440       | dBi                |
| Antenna Gain(numeric)                                       | 2.780       | -                  |
| Power density at prediction frequency( S)                   | 0.0277      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000       | mW/cm <sup>2</sup> |

### Simultaneous transmission operations

Worst Case: Simultaneous MPE 20cm is

$$\sum_{i=1}^n \frac{\text{Power density } i}{\text{Limit } i} < 1$$

->Simultaneous MPE is

$$5\text{G WLAN (0.0277) + BT (0.0026) = 0.0303} < 1$$

$$2.4\text{G WLAN (0.0344) + BT (0.0026) = 0.0370} < 1$$